

**113-SIG-3008**  
**Configure an Ethernet Interface to Enable Broadband Communication**  
**Status: Approved**

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**Distribution Restriction:** Approved for public release; distribution is unlimited.

**Destruction Notice:** None

**Foreign Disclosure: FD1** - This training product has been reviewed by the training developers in coordination with the US Army Signal School and FG foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

**Condition:** Your commander authorizes the DoD civilians to teleworker. You are responsible for getting providing teleworkers access the Internet to fulfill their job responsibilities. You have 2 Cisco Routers (With Cisco IOS release 15.2(4)M3 universal image or comparable), 2 Cisco Switches (With Cisco IOS release 15.0(Z) lan base K9 image or comparable), 1 console cable, 3 ethernet straight-thru cables, 1 serial DCE/DTE cable.

**Standard:** Configures Ethernet interface and establish broadband communication.

**Special Condition:** None

**Safety Risk:** Low

**MOPP 4:**

Task Statements
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**Cue:** None

**DANGER**

None

**WARNING**

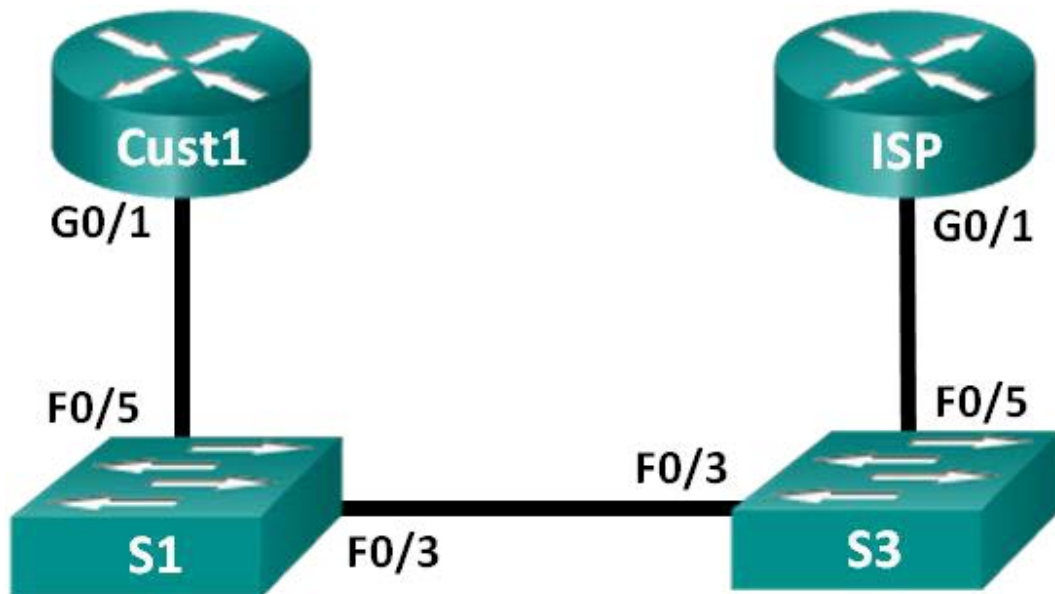
None

**CAUTION**

None

**Remarks:** None

**Notes:** All required references and technical manuals will be provided by the local Command via Cisco Networking Academy at [www.netacad.com](http://www.netacad.com).



Broadband Topology

### Performance Steps

1. Cable the network as shown in the topology.
2. Initialize and reload the routers and switches.
3. Configure the ISP router.
  - a. Create local database username, ISP(config)# username Cust1 with password ciscoppoe.
  - b. Create a pool of addresses for customers. ISP(config)# ip local pool PPPoEPOOL 10.0.0.1 10.0.0.10.
4. Create the Virtual Template and associate IP address of G0/1 with it, associate with the Virtual Template with the pool of addresses and configure CHAP to authenticate customers.
  - a. ISP(config)# interface virtual-template 1.
  - b. ISP(config-if)# ip address 10.0.0.254 255.255.255.0, mtu 1492, peer default ip address pool PPPoEPOOL.
  - c. ISP(config-if)# ppp authentication chap callin, exit.
5. Assign the template to the PPPoE group.
  - a. ISP(config-if)# bba-group pppoe global.
  - b. ISP(config-bba-group)# virtual-template 1, exit.
6. Associate the bba-group with the physical interface.
  - a. ISP(config)# interface g0/1.
  - b. ISP(config-if)# pppoe enable group global, no shutdown.
7. Configure the Cust1 Router.

- a. Configure interface for PPPoE connectivity. Cust1 (config)# interface g0/1.
  - b. Cust1(config-if)# pppoe enable, pppoe-client dial-pool-number 1, exit.
8. Associate the G0/1 interface with a dialer interface, Use the username Cust1 and password ciscoppoe.
- a. Cust1(config)# interface dialer 1.
  - b. Cust1(config-if)# mtu 1492.
  - c. Cust1(config-if)# ip address negotiated, encapsulation ppp, dialer pool 1, ppp authentication chap callin, ppp chap hostname Cust1, ppp chap password ciscoppoe, exit.
  - d. Set up a static default route pointing to the Dialer interface. Cust1 (config) #ip route 0.0.0.0.0.0.0 dialer 1.
9. Enable the G0/1 interface on the Cust1 router and observe the debug output as the PPPoE dialer session is established and CHAP authentication takes place.
- a. Cust1(config-if)# ip address negotiated, encapsulation ppp, dialer pool 1, ppp authentication chap callin, ppp chap hostname Cust1, ppp chap password ciscoppoe, exit.
  - b. Issue a show ip route, Cust1# show ip route.
  - c. Issue a show pppoe session, Cust1# show pppoe session.
  - d. Issue ping, Cust1# ping 10.0.0.254.

(Asterisks indicates a leader performance step.)

**Evaluation Guidance:** Score the Soldier GO if all steps are passed (P). Score the Soldier NO GO if any step is failed (F). If the Soldier fails any step, show what was done wrong and how to do it correctly.

**Evaluation Preparation:** Ensure that the equipment is available, serviceable, and ready for use. Use the reference and evaluation guide to score the Soldier's performance. Brief Soldier: Tell the Soldier what is required IAW the task condition and standards.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Cabled the network as shown in the topology.			
2. Initialized and reloaded the routers and switches.			
3. Configured the ISP router.			
4. Created the Virtual Template and associate IP address of G0/1 with it, associated with the Virtual Template with the pool of assessed and configured CHAP to authenticate customers.			
5. Assigned the template to the PPPoE group.			
6. Associated the bba-group with the physical interface.			
7. Configured the Cust1 Router.			
8. Associated the G0/1 interface with a dialer interface, Use the username Cust1 and password ciscoppoe.			
9. Enabled the G0/1 interface on the Cust1 router and observe the debug output as the PPPoE dialer session is established and CHAP authentication takes place.			

**Supporting Reference(s):**

Step Number	Reference ID	Reference Name	Required	Primary
	ISBN: 9781587058820	Implementing Cisco IP Routing (ROUTE) Foundation Learning Guide: Foundation learning for the ROUTE 642-902 Exam (Foundation Learning Guides)	No	No

**TADSS :** None

**Equipment Items (LIN):** None

**Materiel Items (NSN) :**

Step ID	NSN	LIN	Title	Qty
	7025-01-581-2387	05004N	Cisco Integrated Router Gen 2: CISCO 2901/K9	2
	5895-01-539-4546	FA9516	Catalyst 2960 24 PT	2

**Environment:** Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to the current Environmental Considerations manual and the current GTA Environmental-related Risk Assessment card.

**Safety:** In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination.

**Prerequisite Individual Tasks :** None

**Supporting Individual Tasks :** None

**Supported Individual Tasks :** None

**Supported Collective Tasks :** None

**ICTL Data :**

ICTL Title	Personnel Type	MOS Data
MOS 25C Radio Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25C
MOS 25Q Multichannel Transmission Systems Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25Q

MOS 25U Signal Support Systems Specialist Skill Levels 1, 2, 3, and 4	Enlisted	MOS: 25U
MOS 25N Nodal Network Systems Operator-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25N
MOS 25B Information Technology Specialist Skill Levels 1, 2, 3, 4 and 5	Enlisted	MOS: 25B
MOS 25L Cable Systems Installer-Maintainer Skill Levels 1, 2, and 3	Enlisted	MOS: 25L